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Date: December 5, 2003 No. of Pages: 83

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph v. Bak et al.) Confirmation No. 3455
Serial No. 09/827,046)
Filed: April 5, 2001) Group Art Unit 1725
For: DIFFUSION BONDED TOOLING WITH CONFORMAL COOLING) Examiner Johnson, Jonathan J.
)
) Attorney Docket 82091
)

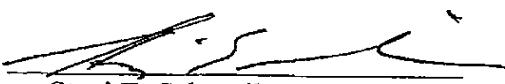
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Honorable Sir:

Pursuant to 37 C.F.R. 1.97(b), record is hereby made of information which the Patent Office may wish to consider in connection with its examination of the above-identified application. Copies of such information, as well as a completed PTO-1449 form and a copy of the European Search Report, are enclosed.

Respectfully submitted,


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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Page 1 of 1
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
ATTY. DOCKET NO. 1-82091	SERIAL NO. 09/827,046	
APPLICANT Joseph v. Bak et al.		
FILING DATE April 5, 2001	GROUP 1725	

U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Nakagawa, T. et al. "Laser Cut Sheet Laminated Forming Dies by Diffusion Bonding." in: *Proceedings of the International Machine Tool Design and Research Conference* (Tokyo, Japan, 1985), pages 505-510. Ref. XP000603191.

DATE CONSIDERED _____
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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Datum/Date
13.11.03

Zeichen/Ref./Ref. pf05524/1jc/sb	Anmeldung Nr./Application No./Demande n°./Patent Nr./Patent No./Brevet n°. 02394037.2-2302-
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Lear Corporation	

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

abstract

title

The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract: 0001



REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.C.7)						
P, X	WO 01 70450 A (STEWART DAVID H) 27 September 2001 (2001-09-27) * abstract; figure 5 * * page 34, line 13 - page 37, line 21 * ---	1,7, 10-14, 18-20,23	B23P15/24 B23P15/00 B29C33/04 B29C45/73 B29C33/38						
D, Y	US 5 031 483 A (WEAVER WILLIAM R) 16 July 1991 (1991-07-16) * abstract; figures * * column 6, line 62 - column 8, line 18 * ---	1-30							
Y	NAKAGAWA T ET AL: "LASER CUT SHEET LAMINATED FORMING DIES BY DIFFUSION BONDING" PROCEEDINGS OF THE INTERNATIONAL MACHINE TOOL DESIGN AND RESEARCH CONFERENCE, XX, XX, 22 April 1985 (1985-04-22), pages 505-510, XP000603191 * page 508; figure 5 * ---	1-30							
D, A	CHICCO, B: "Diffusion Bonding of AISI P20 Tool Steel" MATERIALS FORUM, vol. 16, 1992, pages 105-110, XP009019602 * page 105 - page 106 *	1-30	TECHNICAL FIELDS SEARCHED (Int.C.7) B23P B29C B23K						
D, A	LAVRENTYEV A I ET AL: "Ultrasonic measurement of the diffusion bond strength" ULTRASONICS, IPC SCIENCE AND TECHNOLOGY PRESS LTD. GUILDFORD, GB, vol. 38, no. 1-8, March 2000 (2000-03), pages 513-516, XP004197914 ISSN: 0041-624X * page 514, paragraph 3 * ---	1-30							
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The present search report has been drawn up for all claims									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>MUNICH</td> <td>24 October 2003</td> <td>Watson, S</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	MUNICH	24 October 2003	Watson, S
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MUNICH	24 October 2003	Watson, S							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="width: 66%;">CATEGORY OF CITED DOCUMENTS</td> <td style="width: 34%;"></td> </tr> <tr> <td colspan="2"> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document </td> <td> T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document </td> </tr> </table>				CATEGORY OF CITED DOCUMENTS			X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document
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European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 39 4037

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)															
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim																
A	HOLMQUIST M ET AL: "Hot isostatic diffusion bonding of titanium alloy Ti-6Al-4V to gamma titanium aluminide IHI Alloy 01A" SCRIPTA MATERIALIA, ELSEVIER, NEW YORK, NY, US, vol. 39, no. 8, 15 September 1998 (1998-09-15), pages 1101-1106, XP004325443 ISSN: 1359-6462 * page 1101, paragraph 2 *	1-30																
A	EP 1 004 422 A (INNOVA ENGINEERING GMBH) 31 May 2000 (2000-05-31) * abstract; figures *	21																
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)															
<p>The present search report has been drawn up for all claims</p> <p>1</p> <table border="1"> <tr> <td>Place of search</td> <td>Date of completion of the search</td> <td>Examiner</td> </tr> <tr> <td>MUNICH</td> <td>24 October 2003</td> <td>Watson, S</td> </tr> <tr> <td colspan="3">CATEGORY OF CITED DOCUMENTS</td> </tr> <tr> <td colspan="3"> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document </td> </tr> <tr> <td colspan="3"> T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document </td> </tr> </table>				Place of search	Date of completion of the search	Examiner	MUNICH	24 October 2003	Watson, S	CATEGORY OF CITED DOCUMENTS			X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 39 4037

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-10-2003

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
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				CN 1430544 T		16-07-2003
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ABSTRACT / ZUSAMMENFASSUNG / ABREGE

02394037.2

A tool with conformal cooling channels is made by diffusion bonding several tool sections {12,14,16,18,20,22} together, which enables the cooling channels to be made in virtually any desired configuration. Once the desired configuration of the cooling channels is determined, a block of tool material in an annealed state is cut into layers. Grooves are formed in the surfaces of the layers or holes are formed through the layers such that the grooves and holes will form the cooling channels when the layers are reconstituted into the block. Indexing holes or equivalent structure fixedly locates adjacent layers when they are reconstituted, and the grooves and holes are precisely located relative to the indexing holes, thus ensuring that the grooves and holes in facing surfaces of the layers form the desired channels. The layers are then diffusion bonded by pressing them together at an elevated temperature.